

Recovery Plan for Fat Pocketbook Mussel (*Potamilus capax*)

Available at: https://ecos.fws.gov/docs/recovery_plan/891114c.pdf

Original Approved: October 4, 1985

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Revision Approved: November 14, 1989

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AMENDMENT 1

We have analyzed the best available information that indicated the need to amend recovery criteria for this species since the recovery plan was completed. In this recovery plan modification, we reference the current criteria; identify the criteria amendments, and document information and changes in status and management we considered in finalizing the criteria amendments. The criteria amendments are shown as an appendix that supplements the recovery plan, superseding only Part II, A, p. 10, of the recovery plan (U.S. Fish and Wildlife Service (USFWS, Service) 1989). Recovery plans are a non-regulatory document that provides guidance on how best to help recover species.

**For
U.S. Fish and Wildlife Service
Atlanta, Georgia**

Approved: Franklin J. Arnold
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Date: 9/26/19

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

In order to amend the recovery goal and criteria, we used information derived during the 5-year review of the fat pocketbook mussel (USFWS 2012), which was peer-reviewed by State, Service, and other species and ecosystem experts. We have also considered information developed through implementation of Biological Opinions, and during U.S. Army Corps of Engineers (USACE) conservation planning for the species (e.g., USACE 2013, 2018). We provided the draft revised goal and criteria to States and other conservation collaborators within the range of the fat pocketbook for their review, and have incorporated pertinent comments.

ADEQUACY OF RECOVERY CRITERIA

Section 4(f)(1)(B)(ii) of the Endangered Species Act (Act) requires that each recovery plan shall incorporate, to the maximum extent practicable, “objective, measurable criteria which, when met, would result in a determination...that the species be removed from the list.” Legal challenges to recovery plans (see *Fund for Animals v. Babbitt*, 903 F. Supp. 96 (D.D.C. 1995)) and a Government Accountability Audit (GAO 2006) also have affirmed the need to frame recovery criteria in terms of threats assessed under the five delisting factors.

Recovery Criteria

The original recovery plan (https://ecos.fws.gov/docs/recovery_plan/891114c.pdf) (USFWS 1989) only contains downlisting criteria for the species, see page 54.

Synthesis

The Service and its partners reassessed the status of the fat pocketbook mussel in a 5-year review (USFWS 2012) that found the St. Francis drainage population had been successfully protected under the Act for more than 30 years (**Downlisting Criterion 1**). At that time, State and Federal agencies were also working together to protect and manage the species through project planning, and development and incorporation of protective best management practices (BMPs) into appropriate channel engineering programs (Service 2012). The review also provided evidence of the existence and viability of two additional populations (**Downlisting Recovery Criterion 2**) in the Ohio River drainage and the Lower Mississippi River (USFWS 2012). The 5-year review concluded that even though the status of the fat pocketbook mussel had improved significantly over the past 2 decades, status would remain unchanged until recovery criteria were revised, and conservation strategies were developed, implemented, and supported by research and monitoring (USFWS 2012).

AMENDED RECOVERY CRITERIA/OBJECTIVE

Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that it may be delisted and the protections afforded by the Act are no longer necessary. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. The term “endangered species” means any species (species, sub-species, or DPS) which is in danger of extinction throughout all or a significant portion of its range. The term “threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Revisions to the Lists, including delisting or downlisting a species, must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or threatened species (or not) because of threats to the species. Section 4(b) of the Act requires that the determination be made on the basis of the best scientific and commercial data available. Thus, while recovery plans

provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery, they are guidance and not regulatory documents.

Recovery criteria should help indicate when we would anticipate that an analysis of the species' status under section 4(a)(1) would result in a determination that the species is no longer an endangered species or threatened species. A decision to revise the status of or remove a species from the Federal Lists of Endangered and Threatened Wildlife and Plants, however, is ultimately based on an analysis of the best scientific and commercial data then available, regardless of whether that information differs from the recovery plan. When changing the status of a species, we first propose the action in the *Federal Register* to seek public comment and peer review, followed by a final decision announced in the *Federal Register*.

The recovery objective is to secure the conservation of the fat pocketbook mussel to the extent that the protections of the Act are no longer needed. This will require multiple, independent, viable populations across the species range, and securing management of those populations and their habitats for the foreseeable future.

Herein, we provide delisting criteria for the fat pocketbook mussel, which will supplement the downlisting criteria included in the fat pocketbook mussel recovery plan as follows:

Delisting Recovery Criteria

The fat pocketbook mussel will be considered for delisting when:

- 1) All three drainage populations (St. Francis, Ohio, and Mississippi River) exhibit a stable or increasing trend, evidenced by natural recruitment, and multiple age classes (**Factors A, D**).
- 2) Fat pocketbook mussels are documented from a minimum of 12 sites along 200 km (125 mi) reaches within each of the St. Francis, Ohio, and Mississippi River drainages (**Factors A, E**).
- 3) Active USACE management programs are in place, and assured to continue into the foreseeable future, within each of the three drainages leading to maintenance or improvement of fat pocketbook mussel habitats and population expansion (**Factors A, D**).

Justification of Criteria

The delisting recovery criteria reflect the best available and most up-to-date information on the fat pocketbook mussel. These criteria address the five factors described in section 4(a)(1) of the Act and incorporate the conservation biological principles of representation, resiliency, and redundancy (Wolf *et al.* 2015).

Criterion 1: The objective of this criterion is to reduce the threat of curtailment of fat pocketbook numbers and range by increasing the distribution and abundance of the species. The

existence of three populations over extensive river reaches demonstrates a profound improvement in range and abundance, and a decrease in threat or risk of habitat and range curtailment under **Factor A**. This criterion also provides redundancy reducing the species vulnerability to random events (**Factor E**). Distribution within the three populations (e.g., the presence of drainage subpopulations occupying a variety of habitats) shows an increase in ecological representation for the species. Each of the targeted river drainages have been extensively modified by channel engineering, including impoundment, channelization, dredging, dike and revetment construction, etc. The expanded range and abundance throughout a variety of modified river and stream reaches demonstrates population and species resilience to habitat modification.

Criterion 2: The objective is to demonstrate population viability over time through natural reproduction and recruitment. Fat pocketbook mussels are early maturing, fast growing, and short-lived. Species within the genus *Potamilus* mature at around 2 or 3 years (e.g., Haag 2012); therefore, 12 years may encompass 4 generations of recruitment. Because the species is fast growing, the presence of small, medium, and large individuals (ages 0-8) can demonstrate multiple fat pocketbook mussel generations at sites within the drainage populations. Multi-generation persistence and recruitment within the three river drainages supports reduction of threat under **Factor A**, and indicates the adequacy of existing regulatory mechanisms to protect the species over time (**Factor D**).

Criterion 3: This criterion directly addresses the primary causes of decline and potential future threats from Federal actions (**Factors A and D**). It is measured by the development, implementation, and success of incorporating conservation elements into Federal program management plans within each drainage. This criterion supports fat pocketbook mussel resiliency, representation, and redundancy by providing assurances that Federal program BMPs and standard operating procedures protective of the species and its habitats will continue in the absence of the protections of the Act.

Rationale for Recovery Criteria

Recovery criteria must be objective and measurable and they must address the factors related to the decline of the species and its designation as a threatened or endangered species. All historical and current fat pocketbook mussel populations occur within jurisdictional waters of the United States. As such, their decline was directly associated with Federal programs and actions, specifically channel engineering for flood control and navigation, and water quality and wetland permit actions. When listed, there was a single known surviving fat pocketbook mussel population restricted to habitats within a 43-mile reach of the St. Francis River Floodway (Service 1985). The primary threats identified for fat pocketbook mussel at the time of listing were curtailment of range due to habitat modification for flood control and navigation (**Factor A**), the potential effects of habitat modification by Federal programs within its remaining range (**Factor A**), and the inadequacy of existing regulatory mechanisms to protect the species (**Factor D**) (41 FR 29063). Due to its limited distribution, the species was also vulnerable to natural or anthropogenic random events such as droughts, floods, or spills (**Factor E**). USACE has incorporated conservation measures into navigation, flood control, and maintenance programs in

the Mississippi and St. Francis River drainages (USACE 2013, 2018) that have contributed to the expansion of the abundance and range of fat pocketbook mussel, ameliorated threats under Factors A, D, and E, and that support resilience, redundancy and representation of the species.

LITERATURE CITED

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